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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,586	02/06/2004	Shunpei Yamazaki	740756-2707	2329

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EXAMINER	
NGUYEN, THANH T	

ART UNIT	PAPER NUMBER
2813	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/772,586	YAMAZAKI, SHUNPEI	
	Examiner	Art Unit	
	Thanh T. Nguyen	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *7-12 and 19-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,13-18 and 25-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 3-6, 13-18, 25-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-6, 13-18, 25-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (U.S. Patent No. 7,176,069).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Referring to figures 9a-9d, Yamazaki et al. teaches forming a wiring (11) by using ejecting a first solution comprising a conductive material using a first solution ejector with moving the first solution ejector (see figure 9a, col. 7, lines 11-20);

Forming a resist mask (14) by ejecting a second solution comprising a resist material on the wiring using a second solution ejector with moving the second solution ejector (see figure 9b, col. 7, lines 21-32); and

Etching the wiring using an atmospheric pressure plasma device having a linear plasma generator using a resist mask as a mask (see figure 9c, col. 7, lines 33-44).

Regarding to claims 4, 5, 16-17, 25-32, see col. 7, lines 11-53).

Regarding to claim 6, 18, see col. 6, lines 9-14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa (U.S. Patent Publication No. 2003/0132987) in view of Tsutsui (U.S. Patent Publication No. 2001/0027013) and further in view of Mori et al. (JP Patent No. 2000/169977).

Referring to figures 1-67, Ogawa teaches a method for producing a semiconductor device comprising:

forming wiring by ejecting a first solution comprising a conductive material using first solution ejector with moving the first solution ejector (see paragraph# 107, 232. noted that the solution has to move form the ejector to the surface of the substrate to form a wiring layer),

forming a resist mask on the wiring (see paragraphs# 58, 109, 234), and

etching the wiring using an atmosphere plasma device having linear plasma generator using the resist mask as a mask (see paragraph# 184).

Regarding to claims 4, 16, 25-26, 29-30, the solution ejector has one or more of solution ejection ports (57, paragraph# 134, 137, claim 1).

Regarding to claims 5, 17, 27-28, 31-32, a wiring material, or a resist, or the like is ejected using the solution ejector a substrate is heated (see paragraph# 201/227).

However, the reference does not clearly teach forming the resist mask layer by using solution ejector, etching the wiring using an atmospheric-pressure plasma device having a plurality of linearly-arranged plasma generators, and etching the wiring layer at the atmospheric pressure or near-atmospheric pressure.

Tsutsui teaches in paragraph# 24 a method of forming a resist mask by dropping liquid solution of photoresist material on a conductive layer is known as spin coating process.

Therefore, it would have been obvious to a person of ordinary skill in the requisite art at the time of the invention was made would forming the resist mask layer by using solution ejector in process of Ogawa as taught by Tsutsui because the process is known in the art to form the photoresist film with no deformation occur.

Mori et al. teaches etching the wiring (metal layer) by using high frequency plasma under atmospheric pressure (see abstract, meeting claims 1-3, 5, 13-15, 18).

Therefore, it would have been obvious to a person of ordinary skill in the requisite art at the time of the invention was made would etching the wiring layer by using high frequency plasma under atmospheric pressure in process of Ogawa as taught by Mori et al. because the process would enable to etch the metal easily.

It would be obvious to one ordinary skill in the art to etch the wiring layer using a plurality of linearly-arranged plasma generators with the same process as using in a linearly-arrange plasma generators to etch the wiring layer since it is well-known in the art to repeat the same process for multiple effect. See St. Regis paper, Co. V. Bemis Co. Inc. 193 USPQ 8, 11 (7th circuit 1977) (meeting claims 13-15).

Therefore, it would have been obvious to a person of ordinary skill in the requisite art at the time of the invention was made would etch the wiring using an atmospheric-pressure plasma device having a plurality of linearly-arranged plasma generators in process of Ogawa because the process would provide a uniform etching in the wiring layer.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6, 13-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of copending Application No. 10/771,421; 10/771,277; 10/772,419. Although the conflicting claims are not identical, they are not patentably distinct from each other because each of these copending applications teach a method for forming wiring using a first solution ejector for ejecting a conductive material, forming a resist mask on the wiring using a second solution ejector, and etching the wiring using an atmospheric-pressure plasma device having a linear plasma generator using the resist mask as a mask.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed 7/6/07 have been fully considered but they are not persuasive.

Applicant contends that Ogawa does not teach ejecting a solution using a solution ejector with moving the solution ejector. In response to applicant that Ogawa clearly teaches forming wiring by ejecting a first solution comprising a conductive material using first solution ejector

with moving the first solution ejector (see paragraph# 107, 232, noted that the solution has to move form the ejector to the surface of the substrate to form a wiring layer).

Applicant contends that the examiner's conclusion of obviousness is based upon improper hindsight reasoning. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The TSM test (teaching, suggest or motivation) captures a helpful insight: A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. Although common sense directs caution as to a patent application claiming as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does. Inventions usually rely upon building blocks long since uncovered, and claimed discoveries almost necessarily will be combinations of what, in some sense, is already known. Helpful insights, however, need not become rigid and mandatory formulas. If it is so applied, the TSM test is incompatible with this Court.s precedents. The diversity of inventive pursuits and of modern technology counsels against confining the obviousness analysis by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasizing the importance of published articles and the explicit content

of issued patents. In many fields there may be little discussion of obvious techniques or combinations, and market demand, rather than scientific literature, may often drive design trends.

The Court of Appeals, finally, drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias. A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham*, 383 U. S., at 36 (warning against a temptation to read into the prior art the teachings of the invention in issue. and instructing courts to . .guard against slipping into the use of hindsight. . (quoting *Monroe Auto Equipment Co.* v. *Heckethorn Mfg. & Supply Co.*, 332 F. 2d 406,412 (CA6 1964))). Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it. We note the Court of Appeals has since elaborated a broader conception of the TSM test than was applied in the instant matter. See, *e.g., DyStar Textilfarben GmbH & Co. Deutschland KG* v. *C. H. Patrick Co.*, 464 F. 3d 1356, 1367 (2006) (.Our suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense.); *Alza Corp.* v. *Mylan Labs., Inc.*, 464 F. 3d 1286, 1291 (2006)(.There is flexibility in our obviousness jurisprudence because a motivation may be found *implicitly* in the prior art. We do not have a rigid test that requires an actual teaching to combine . . ..). Those decisions, of course, are not now before us and do not correct the errors of law made by the Court of Appeals in this case. The extent to which they may describe an analysis more consistent with our earlier precedents and our decision here is a matter for the Court of Appeals to consider in its future cases. What we hold is that the fundamental misunderstandings identified above led the Court of Appeals in this case to apply a test inconsistent with our patent law decisions. See KSR international v. Teleflex, US Supreme Court, April 30, 2007.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (571) 272-1702. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pairdirect.uspto.gov. Should you have questions on access to thy Private PAIR system, contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

Thanh Nguyen
Patent Examiner
Patent Examining Group 2800

TTN